

## **REMARKS**

Claims 18-34 remain pending in this application. In the Office Action mailed March 3, 2009 ("Office Action"), claims 18-24 and 30-32 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,411,412 ("Jiang 1") (and U.S. Patent No. 6,288,811 ("Jiang 2"), which was incorporated by reference within Jiang 1); claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of U.S. Patent No. 7,263,091 ("Woo"); claims 26-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of Woo, and further in view of U.S. Patent No. 6,256,125 ("Uehara"); and claim 29 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of Uehara. The Office Action also indicated that claims 33 and 34 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Applicant thanks the Examiner for the indication of the allowable subject matter recited in claims 33 and 34. By this Reply, Applicant amends claims 18, 20, 25, 26, and 28-34. No new matter has been added by this Reply.

### **I. Claim Rejection Under 35 U.S.C. § 102(b)**

The Office Action rejected claims 18-24 and 30-32 under 35 U.S.C. § 102(b) as being anticipated by Jiang 1. Claims 18, 30, and 31 are the only independent claims included in this claim rejection, and Applicant traverses the rejection of independent claims 18, 30, and 31 under 35 U.S.C. § 102(e) based on Jiang 1 at least because Jiang 1 fails to disclose all of the subject matter recited in each of those claims.

**A. Independent Claim 18**

Independent claim 18 is directed to “a packet and optical routing equipment, comprising . . . a non-packet optical/electric converter connected to said non-packet optical port and suitable for converting said branch non-packet signals into and from non-packet electric signals; . . . [and] an electric switching unit connected to [a] non-packet optical/electric converter and [a] packet forwarding stage for exchanging therewith . . . electric non-packet and packet signals . . . .” Jiang 1 fails to disclose at least this recited subject matter.

Jiang 1 discloses an optical communication network 10 that includes a plurality of optical network interface systems 230 and 250 (or 330 and 350 in Fig. 3) and a bridge 200 for transporting information from one optical waveguide channel to another via optical network interface systems and communication paths 411, 412, 421, and 422. Jiang 1 at col. 2, lines 59-64 and Figs. 1 and 3. Each of optical network interface systems 330 and 350 includes two subsystems: optical network interfaces 332 and 352 and transponder arrays 334 and 354. Jiang 1 at col. 6, lines 9-13. Optical network interface systems 330 and 350 convert information encoded on the optical channels to electrical signals. Jiang 1 at col. 6, lines 39-42. Optical network interfaces 332 and 352 facilitate transfer of information of both cell-formatted and TDM-formatted data using cell format modules 410, 430 and TDM format modules 420, 440, respectively. Jiang 1 at col. 6, lines 50-59.

The Office Action asserts that Jiang 1's transponder array 354 constitutes Applicant's recited non-packet optical/electrical converter. Office Action at 3. The Office Action also asserts that the alleged combination of cell format module 410 and

TDM format module 420 “may be combined as one unit for routing the packet and non-packet signals,” and that such a combination constitutes Applicant’s recited “electric switching unit.” Id. Applicant respectfully disagrees with these assertions and characterizations contained in the Office Action. Nevertheless, even assuming, for argument’s sake, that such characterizations are accurate, which they are not, Jiang 1 facilitates the transfer of different data formats from one optical fiber to another using a plurality of different pieces of equipment (e.g., optical network interfaces 332 and 352, transponder arrays 334 and 354, cell and TDM format modules 410, 420, 430, and 440). In contrast, independent claim 18 requires that the devices for routing the different types of data reside in the same equipment, reciting, in pertinent part, “*a packet and optical routing equipment*, comprising . . . a non-packet optical/electric converter connected to said non-packet optical port and suitable for converting said branch non-packet signals into and from non-packet electric signals; . . . [and] an electric switching unit connected to [a] non-packet optical/electric converter and [a] packet forwarding stage for exchanging therewith . . . electric non-packet and packet signals . . . .”

Because the equipment in Jiang 1 relied on as allegedly disclosing Applicant’s claimed “non-packet optical/electrical converter” and “electric switching unit” are actually separate pieces of equipment (and are, in fact, contained in separate systems altogether), Jiang 1 necessarily fails to disclose or render obvious “a packet and optical routing equipment, comprising. . . a non-packet optical/electric converter connected to said non-packet optical port and suitable for converting said branch non-packet signals into and from non-packet electric signals; . . . [and] an electric switching unit connected to [a] non-packet optical/electric converter and [a] packet forwarding stage for

exchanging therewith . . . electric non-packet and packet signals,” as required by Applicant’s independent claim 18.

Because Jiang 1 fails to disclose or render obvious all of the subject matter recited in independent claim 18, the 35 U.S.C. § 102(b) rejection with respect to independent claim 18 based on Jiang 1 is improper and should be withdrawn. Further, claims 19-24 depend, either directly or indirectly, from independent claim 18 and should be allowable for at least the same reason that independent claim 18 is allowable. Therefore, Applicant respectfully requests reconsideration and withdrawal of the § 102(b) rejection with respect to claims 18-24.

**B. Independent Claim 30**

Independent claim 30 recites “an optical network of wavelength multiplexing type, comprising a plurality of packet and optical routing equipment and a plurality of optical connections extending between pairs of packet and optical routing equipment, each said packet and optical routing equipment comprising: a non-packet optical/electric converter connected to said non-packet optical port and suitable for converting said branch non-packet signals into and from non-packet electric signals; . . . [and] an electric switching unit connected to [a] non-packet optical/electric converter and [a] packet forwarding stage for exchanging therewith . . . electric non-packet and packet signals . . . .” As noted above with regard to independent claim 18, Jiang 1 fails to disclose or render obvious at least this recited subject matter. For at least this reason, the 35 U.S.C. § 102(b) rejection with respect to independent claim 30 based on Jiang 1 is improper and should be withdrawn.

**C. Amended Independent Claim 31**

Amended independent claim 31 is directed to a method for packet and optical signal routing, comprising the steps of “extracting second selected of [an] input multiplexed optical signals and adding . . . branch non-packet and packet optical signals to said output multiplexed optical signals; . . . wherein the extracting second selected of said input multiplexed optical signals and adding said branch non-packet and packet optical signals to said output multiplexed optical signals are executed in a single packet and optical routing equipment.” Jiang 1 fails to disclose or render obvious at least this recited subject matter.

For example, the step of “adding said branch non-packet and packet optical signals to said output multiplexed optical signals” comprises “converting . . . received branch non-packet and packet optical signals into non-packet and packet electric signals; [and] switching said non-packet and packet electric signals according to allowable resources.” As noted above with respect to independent claim 18, the equipment in Jiang 1 relied on as allegedly disclosing Applicant’s claimed “non-packet optical/electrical converter” and “electric switching unit” are actually separate pieces of equipment. Thus, Jiang 1 necessarily fails to disclose or render obvious “extracting second selected of [an] input multiplexed optical signals and adding . . . branch non-packet and packet optical signals to said output multiplexed optical signals; . . . *wherein the extracting second selected of said input multiplexed optical signals and adding said branch non-packet and packet optical signals to said output multiplexed optical signals are executed in a single packet and optical routing equipment,*” as recited in Applicant’s amended independent claim 31 (emphasis added). For at least this reason, the 35 U.S.C. § 102(b) rejection with respect to amended independent claim 31 based on

Jiang 1, cannot be maintained and should be withdrawn. Further, claim 32 depends from amended independent claim 31 and should be allowable for at least the same reason that amended independent claim 31 is allowable.

## **II. Claim Rejections Under 35 U.S.C. § 103(a)**

### **A. Dependent Claim 25**

Dependent claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of Woo. Dependent claim 25 depends from independent claim 18, which is allowable over Jiang 1 for at least the reasons outlined above. Woo, which was cited only for its purported disclosure of a forwarding engine coupled between an electronic switching unit and a packet optical/electrical converter, does not remedy the deficiencies of Jiang 1 outlined above. Therefore, the 35 U.S.C. § 103(a) rejection of dependent claim 25 is improper and should be withdrawn.

Moreover, dependent claim 25 recites that “wherein said packet forwarding stage [of independent claim 18] comprises: a packet forwarding module coupled between said electric switching unit and said packet optical /electric converter; and a packet and optical control plane configured to generate control signals for said optical input and output, said optical forwarding and multiplexing stage, said interface converter, said electric switching unit, and said non-packet and packet optical/electric converters.” Jiang 1 and Woo, regardless of whether they are viewed individually or as a whole, fail to disclose or render obvious at least this subject matter recited in dependent claim 25.

The Office Action asserts that Woo discloses a packet forwarding stage comprising “[a] packet optical/electrical converter suitable for generating control

signals.” Woo, however, fails to disclose a packet forwarding stage that comprises “a packet and optical control plane *configured to generate control signals for said optical input and output, said optical forwarding and multiplexing stage, said interface converter, said electric switching unit, and said non-packet and packet optical/electric converters*,” as recited in Applicant’s dependent claim 25. In fact, Woo is silent with respect to generating control signals for optical input and output, optical forwarding and multiplexing stage, interface converter, electric switching unit, and non-packet and packet optical/electric converters, and does not disclose or render obvious such subject matter.

Because Woo 1) fails to disclose or render obvious all of the subject matter of independent claim 18 (from which dependent claim 25 depends) and 2) fails to disclose or render obvious “a packet forwarding stage compris[ing]: a packet forwarding module coupled between said electric switching unit and said packet optical /electric converter; and a packet and optical control plane configured to generate control signals for said optical input and output, said optical forwarding and multiplexing stage, said interface converter, said electric switching unit, and said non-packet and packet optical/electric converters,” as recited in Applicant’s dependent claim 25, the 35 U.S.C. § 103(a) rejection of this claim based on Jiang 1 and Woo cannot be maintained and should be withdrawn.

**B. Dependent Claims 26-28**

Dependent claims 26-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of Woo, and further in view of Uehara. Each of dependent claims 26-28 depends indirectly from independent claim 18, which is

allowable over Jiang 1 for at least the reasons outlined above. Woo, which was cited only for its purported disclosure of a forwarding engine coupled between an electronic switching unit and a packet optical/electrical converter, does not remedy the deficiencies of Jiang 1 outlined above. Uehara, which was cited only for its purported disclosure of various aspects of channel termination units, also fails to remedy the deficiencies of the combination of Jiang 1 and Woo. Therefore, the 35 U.S.C. § 103(a) rejection of dependent claims 26-28 is improper and should be withdrawn.

**C. Dependent Claim 29**

Dependent claim 29 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang 1 in view of Uehara. Dependent claim 29 depends independent claim 18, which is allowable over Jiang 1 for at least the reasons outlined above. Uehara, which was cited only for its purported disclosure of an optical switching unit connected to an interface converter and a multiplexing/demultiplexing unit, does not remedy the deficiencies of Jiang 1 outlined above. Uehara, which was cited only for its purported disclosure of various aspects of channel termination units, fails to remedy the deficiencies of the Jiang 1. Therefore, the 35 U.S.C. § 103(a) rejection of dependent claims 29 is improper and should be withdrawn.

**III. Conclusion**

In view of the foregoing remarks, Applicant respectfully requests reconsideration and reexamination of this application, withdrawal of the claim rejections, and the timely allowance of pending claims 18-34.

The Office Action contains characterizations and assertions regarding the claims and the cited art with which Applicant does not necessarily agree. Unless expressly



noted otherwise, Applicant respectfully declines to automatically subscribe to any characterizations or assertions included in the Office Action.

If the Examiner believes that a conversation might expedite prosecution of this application, the Examiner is cordially invited to call Applicant's undersigned representative.

Please grant any extensions of time required to enter this Reply and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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